

We Claim:

1. A method for drying a sample, said method comprising the steps of :
  - (a) placing a sample into a sealable chamber;
  - (b) creating a vacuum inside said chamber by evacuating air from the inside of said chamber after it is sealed;
  - (c) passing evacuated air from said sealable chamber through a cold trap to trap moisture in said evacuated air.
2. A method as set forth in Claim 1 wherein said method further includes heating said sealable chamber.
3. A method as set forth in Claim 2 wherein said heating step includes heating the interior of said sealable chamber by supplying electromagnetic energy to said interior of said sealable chamber.
4. A method as set forth in Claim 3 wherein said heating step of supplying electromagnetic energy is supplying light in the infrared range.
5. A method as set forth in Claim 4 further includes monitoring a specific parameter to determine if moisture is removed from said sample in said sample chamber.
6. A method as set forth in Claim 5 wherein said monitoring step includes weighing said sample in said sealable chamber a plurality of times during said method.

7. A method as set forth in Claim 5 wherein said monitoring step includes monitoring said vacuum in said chamber until it reaches a predetermined level.
8. A method as set forth in Claim 5 wherein said monitoring step includes monitoring humidity in said evacuated air until said humidity reaches a predetermined level.
9. A method as set forth in Claim 5 wherein said monitoring step includes removing said sample from said sealable chamber and weighing said sample on an external scale a plurality of times.
10. A method as set forth in Claim 5 wherein said heating step further includes using a heating pad with said sealable chamber.
11. A method as set forth in Claim 2 wherein said heating step includes a step of supplying a predetermined amount of heated air to said sealable chamber during said creating a vacuum step.
12. A method as set forth in Claim 11 wherein said step of supplying a predetermined amount of heated air includes supplying heated air for a first period of time and stopping said supply of heated air for a second period of time.
13. A method of Claim 11 wherein said step passing evacuated air through a cold trap is interrupted for said first period of time.

14. A method of Claim 13 wherein said step of creating a vacuum further includes creating a vacuum at a first level during said first period of time and creating a vacuum at a second level during said second period of time.
15. A method of Claim 14 which further includes a step of monitoring a specific parameter to determine if moisture is removed from said sample.
16. A method of Claim 15 where in said step of monitoring includes weighing said sample in said sealable chamber a plurality of times.
17. A method of Claim 15 wherein said step of monitoring includes monitoring said vacuum in said chamber until it reaches a predetermined level.
18. A method of Claim 15 wherein said step of monitoring includes monitoring humidity in said evacuated air until said humidity reaches a predetermined level.
19. A method of Claim 15 wherein said step of monitoring includes removing said sample from said sealable chamber and weighing said sample on an external scale a plurality of times.
20. A method of Claim 15 wherein said heating step further includes using a heating pad with said sealable chamber.
21. A method of Claim 10 further includes a step of using a controller to control said creating a vacuum step, said passing evacuated air step, said heating step, and said monitoring step.

22. A method of Claim 20 further includes a step of using a controller to control said creating a vacuum step, said heating step, said passing evacuated air step, and said monitoring step.

23. An apparatus for drying a sample comprising:

- (a) a sealable chamber with at least one outlet;
- (b) a cold trap in fluid communication with said sealable chamber through said outlet;
- (c) means for creating a vacuum in fluid communication with said cold trap and said sealable chamber; whereby said means for creating a vacuum may evacuate air from said sealable chamber, said evacuated air passing through said cold trap before reaching said means for creating a vacuum.

24. An apparatus of Claim 23 wherein said apparatus further comprises means for heating said sealable chamber.

25. An apparatus of Claim 24 wherein said means for heating said sealable chamber is controllable whereby at least one predetermined temperature may be achieved in said sealable chamber.

26. An apparatus as set forth in Claim 25 wherein said means for heating is means for supplying electromagnetic energy to said interior of said sealable chamber.

27. An apparatus as set forth in Claim 26 wherein said means for supplying electromagnetic energy is an infrared lamp.

28. An apparatus as set forth in Claim 27 which further includes means for monitoring a specific parameter to determine if moisture is removed from said sample.
29. An apparatus as set forth in Claim 28 wherein said means for monitoring comprises a load cell on which said sample is placed whereby the weight of said sample may be monitored. thus determining the amount of moisture in said sample.
30. An apparatus as set forth in Claim 28 wherein said means for monitoring comprises means for measuring said vacuum whereby said sealable chamber is maintained at a particular vacuum level.
31. An apparatus as set forth in Claim 28 wherein said means for monitoring comprises means for measuring humidity in said sealable chamber.
32. An apparatus as set forth in Claim 28 wherein said means for heating further comprises a heating pad used with said sealable chamber.
33. An apparatus as set forth in Claim 29 wherein said load cell is placed external to said sealable chamber and said sample is removed from said sealable chamber to be placed on said load cell to determine the weight of said sample.
34. An apparatus as set forth in Claim 33 further comprising a means for controlling said means for creating a vacuum, said means for heating, and said means for monitoring.

35. An apparatus as set forth in Claim 24 wherein said apparatus further comprises a inlet into said sealed chamber and said means for heating heats air to enter said sealable chamber through said inlet.

36. An apparatus as set forth in Claim 35 wherein said apparatus further comprises a first valve in said inlet; a bypass line from said sealable chamber to said means for creating a vacuum including a second valve in said bypass line; a third valve in said outlet between said sealable chamber and said cold trap whereby said first valve, said second valve, and said third valve may be opened and closed to control the flow of heated air into said sealable chamber and the flow of air from said sealable chamber to said means for creating a vacuum bypassing said cold trap at predetermined times.

37. An apparatus as set forth in Claim 36 which further includes means for monitoring a specific parameter to determine if moisture is removed from said sample.

38. An apparatus as set forth in Claim 37 wherein said means for monitoring comprises a load cell on which said sample is placed whereby the weight of said sample may be monitored.

39. An apparatus as set forth in Claim 37 wherein said means for monitoring comprises means for measuring said vacuum whereby said sample chamber is maintained at a particular vacuum level.

40. An apparatus as set forth in Claim 37 wherein said means for monitoring comprises

means for measuring humidity in said sealable chamber.

41. An apparatus as set forth in Claim 38 wherein said load cell is placed external to said sealable chamber and said sample is removed from said sealable chamber to be placed on said load cell to determine the weight of said sample.

42. An apparatus as set forth in Claim 37 wherein said means for heating further comprises a heating pad used with said sealable chamber.

43. An apparatus as set forth in Claim 37 further comprising a means for controlling said means for creating a vacuum, said means for heating, said means for monitoring, said first valve, said second valve, and said third valve.